

Appln. S.N. 10/775,660
Amdt. dated December 11, 2007
Reply to Office Action of September 11, 2007
Docket No. 200300677-1
Page 2 of 11

In the claims:

1. (Currently amended) An ink composition, comprising:
from about 0.1 to 5% by weight of only one resin, the only one resin being a
water-soluble polyurethane, wherein the water-solubility limit of the water-soluble
polyurethane is at least 0.1% at 25°C and wherein the amount of water-soluble
polyurethane present in the ink composition is fully dissolved;
from about 0.1 to 15% by weight of a 1,2-alkyldiol having 5-9 carbon atoms; and
from about 0.5 to 6% by weight of a pigment.
2. (Original) The ink composition of claim 1 wherein the pigment is present at a
concentration in the range of about 2 to 4% by weight, the water-soluble polyurethane is
present at a concentration in the range of about 0.5 to 3% by weight and the 1,2-
alkyldiol is present at a concentration in the range of about 1 to 8% by weight.
3. (Original) The ink composition of claim 1 wherein the water-solubility limit of
the water-soluble polyurethane is greater than about 5% at 25°C.
4. (Original) The ink composition of claim 1 wherein the water-soluble
polyurethane has a weight average molecular weight of less than about 15,000 Da.
5. (Original) The ink composition of claim 1 wherein the water-soluble
polyurethane has an acid number in the range of about 30 to 70.
6. (Original) The ink composition of claim 1 wherein the 1,2-alkyldiol is 1,2-
pentanediol.
7. (Original) The ink composition of claim 1 wherein the 1,2-alkyldiol is 1,2-
hexanediol.

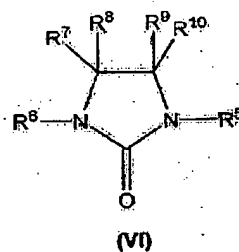
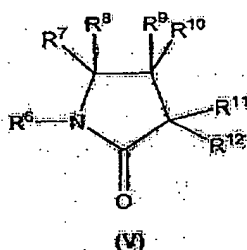
12/12/2007 PCHOMP 00000029 002025 10775660
01 FC:1202 50.00 DA

Appln. S.N. 10/775,660
Amdt. dated December 11, 2007
Reply to Office Action of September 11, 2007
Docket No. 200300677-1
Page 3 of 11

8. (Currently amended) The ink composition of claim 1, further comprising a water-miscible organic co-solvent or a mixture of water-miscible organic co-solvents.

9. (Original) The ink composition of claim 8 wherein the water-miscible organic co-solvent or mixture of water-miscible organic co-solvents is present at a concentration in the range of about 0.5 to 20%.

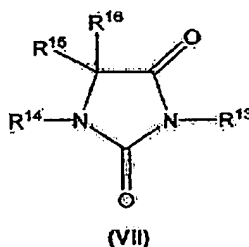
10. (Original) The ink composition of claim 8 wherein the water-miscible organic co-solvent is a 2-pyrrolidone derivative having formula (V) or an imidazolidinone derivative having formula (VI):



wherein R^5 , R^6 , R^7 , R^8 , R^9 , R^{10} , R^{11} and R^{12} are each independently selected from the group consisting of hydrogen and C_1 - C_6 aliphatic groups; and

wherein any C_1 - C_6 aliphatic groups are optionally substituted with one or more hydroxyl groups.

11. (Original) The ink composition of claim 8 wherein the water-miscible organic co-solvent is a hydantoin derivative having formula (VII):



Appln. S.N. 10/775,660
Amdt. dated December 11, 2007
Reply to Office Action of September 11, 2007
Docket No. 200300677-1
Page 4 of 11

wherein R^{13} , R^{14} , R^{15} and R^{16} are each independently selected from the group consisting of hydrogen and C_1 - C_6 aliphatic groups; and

wherein any C_1 - C_6 aliphatic groups are optionally substituted with one or more hydroxyl groups.

12. (Original) The ink composition of claim 8 wherein the mixture of water-miscible organic co-solvents comprises a mixture of 2-pyrrolidone and di-(2-hydroxyethyl)-5,5-dimethylhydantoin.

13. (Original) The ink composition of claim 1 having a viscosity in the range of about 1.5 to 6 cps and a surface tension in the range of about 18 to 45 dynes/cm.

14. (Original) The ink composition of claim 1 having a viscosity in the range of about 2 to 3.4 cps and a surface tension in the range of about 21 to 37 dynes/cm.

15. (Original) The ink composition of claim 1 having a pH in the range of about 8 to 10.

16. (Original) The ink composition of claim 1 having a pH in the range of about 8.5 to 9.5.

17. (Original) The ink composition of claim 1 with the proviso that no surfactant is present in the ink composition.

18. (Original) A process for printing an image on a print medium comprising applying thereto an ink according to claim 1, by means of an ink-jet printer.

Appl. S.N. 10/775,660
Amdt. dated December 11, 2007
Reply to Office Action of September 11, 2007
Docket No. 200300677-1
Page 5 of 11

19. (Original) The process of claim 18 wherein the print medium is a plain paper or a coated paper.

20. (Original) An ink-jet printer cartridge containing an ink according to claim 1.

21. (Previously presented) The ink composition of claim 1 wherein the water-solubility limit of the water-soluble polyurethane is at least 10% at 25°C.

22. (Previously presented) The ink composition of claim 1 wherein the water-soluble polyurethane has a weight average molecular weight in the range of about 4,000 to 10,000 Da.

23. (Previously presented) The ink composition of claim 1 wherein the water-soluble polyurethane has a weight average molecular weight in the range of about 4,000 to 7,000 Da.

24. (Previously presented) The ink composition of claim 1 wherein the water-soluble polyurethane has an acid number in the range of about 40 to 60.

25. (New) The ink composition of claim 1 wherein the 1,2-alkyldiol is present in an amount ranging from about 1% to about 4% by weight.